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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,490	12/12/2003	Matthias Krull	2002DE444	1878
7590 Clariant Corporation Industrial Property Department 4000 Monroe Road Charlotte, NC 28205				
			EXAMINER TOOMER, CEPHIA D	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 05/15/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/735,490

**Applicant(s)**

KRULL ET AL.

**Examiner**

Cephia D. Toomer

**Art Unit**

1797

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 12 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 and 19-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date 2/15/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office action is in response to the amendment filed February 12, 2008 in which claims 1, 9-17, 19 and 27-30 were amended and claims 31-34 were added.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14, 16 17, and 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 5,906,663) in view of Murakami (US 5,730,762).

Brown teaches a fuel oil composition having improved low temperature properties wherein the composition comprises an ethylene/vinyl acetate/vinyl carboxylate having a tertiary alkyl group of 8 or more carbon atoms (see abstract; col. 2, lines 6-25; col. 4, lines 39-41). Vinyl acetate is Applicant's formula 3 monomer, and vinyl carboxylate is Applicant's formula 2 monomer.

The terpolymer has a molecular weight in the range of 3,000 to 20,000 (see col. 3, lines 61-66). The vinyl acetate, vinyl carboxylate and additional monomers which may be present in the polymer represent 2.3 to 35 molar percent of the polymer. The additional monomer may be an olefin. The vinyl acetate and vinyl carboxylate are present in a molar percentage of 1-9 (vinyl acetate) and 4-13 (vinyl carboxylate) (see

col. 3, lines 57-60; col. 3, lines 18-32). The degree of branching of the terpolymer is preferably 6  $\text{CH}_3$  groups/100  $\text{CH}_2$  units (see col. 4, lines 1-4). Since Brown teaches the same terpolymers as of the present invention, it would be reasonable to expect that the melt viscosity of the terpolymer would be the same or similar to that of claims 8 and 26, absent evidence to the contrary.

Brown teaches that additional copolymers may be present in the fuel oil composition and that these copolymers comprise ethylene vinyl ester copolymers (see col. 4, lines 10-19).

Brown teaches that fuel oil may be a middle distillate fuel having a boiling point within the range of 100 °C to about 500 °C (see col. 5, lines 24-43).

Co-additives may be present in combination with the terpolymers. Such additives include additional cold flow improvers such as comb polymers, polar nitrogen compounds and polyoxyalkylene compounds (see col. 6, lines 15-20). Brown teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Brown differs from the claims in that he does not teach that the fuel oil has a sulfur content of at most 350 ppm, aromatics content of at most 22%, a density of less than 0.84, a 90-20% boiling range of less than 110 °C and a paraffin content of more than 3% by weight (claims 1, 9-12 and 27-30). However, Murakami teaches these differences.

Murakami teaches a gas oil obtained by subjecting paraffin containing crude oil to atmospheric distillation and hydrogenation (see abstract; col. 1, lines 56-60). This teaching suggests the claimed percentage of paraffins. In the examples of col. 3 and 4,

Murakami exemplifies oils wherein the sulfur content is less than 350 ppm and the aromatics content is less than 22.

In Table 1, Murakami exemplifies oil wherein the density is less than 0.84 g/cm and the 90-20% boiling range is less than 110 °C.

It would have been obvious to one of ordinary skill in the art too have used the claimed fuel oil because Brown teaches that the fuel oil of his invention has a boiling point within the range of 100- 500 °C and is suitable for use in cold districts and Murakami teaches that his oils are suitable for use in cold districts and that such oils have the required physical parameters as set forth in the present claims.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown and Murakami as applied to claims above, and further in view of WO 9314178.

Brown has been discussed above. Brown fails to teach the addition of at least one alkylphenol-aldehyde resin. However, WO teaches this difference.

WO teaches an additive composition for improving the cold flow properties of fuel oil comprising an alkylphenol-aldehyde resin (see abstract; page 4, lines 9-11; page 5, lines 14-16). It would have been obvious to one of ordinary skill in the art to include an alkylphenol-aldehyde resin because WO teaches that demulsifiers such as alkylphenol-aldehyde resins improve the cold flow properties of fuel oils (see page 2, lines 1-5).

4. Claims 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Murakami and Erner (US 4,364,743).

Brown and Murakami have been discussed above. The prior art fails to teach the addition of 5 to 25% by weight of a mixture of fatty acid alkyl esters. However, Emer teaches this difference.

Erner teaches that fatty acid esters provide a source of energy when combined with conventional middle distillate fuel oils (see abstract; col. 1, lines 60-66). The fatty esters may be prepared by a tranesterification reaction using rapeseed oil and methyl alcohol (see col. 5, lines 56-60; col. 6, lines 4-12). The esters are mixed with the middle distillates in the range from about 1-99% by weight (see col. 7, lines 14-19). Example 1 contains composition A which is a mixture of methyl esters.

It would have been obvious to one of ordinary skill in the art to combine a mixture of fatty acid esters with fuel oil because Brown teaches that the fuel oil may be petroleum based or vegetable based oil and Erner teaches that the vegetable based methyl esters are used to extend the supply of petroleum middle distillates to meet the increasing demand for these fuel-efficient products.

5. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Brown teaches away from the claimed invention because he is silent with respect to the low sulfur fuel oil. Applicant argues that the skilled artisan would not combine Murakami with Brown because Applicant discovered that the presence of Brown's additive having the required component B fails filterability tests in low-sulfur, low-aromatic fuel oil as claimed by Applicant. Applicant relies upon the data in the specification and the declaration of Mr. Krull to support his argument.

In the tests, Applicant compares the present terpolymer to terpolymer A and copolymer B of Brown. Applicant alleges that terpolymer A of Brown contains 16 mol% vinyl acetate and 1.2 mol% vinyl ester of neodecanoic acid. Copolymer B is ethylene vinyl acetate with 4.9 mol% vinyl acetate.

The examiner has reviewed the data in the declaration and specification and is not persuaded that the results are superior or unexpected. Brown teaches that the terpolymer of his invention contains 4 to 13 mol% of formula II, which is the tertiary branched alkyl group having 8 or more carbon atoms and 1 to 9 percent of formula I, which is vinyl acetate (see col. 3, lines 57-60). Brown teaches that the preferred formula II is neononanoate or neodecanoate. Therefore, it is not clear why Brown would exemplify a terpolymer that is outside the scope of his invention, i.e., wherein formula II is present at only 1.2 mol%. Brown clearly teaches the same terpolymers as those of the present invention.

Table 3 exemplifies additives of the present invention and those outside the scope of the invention wherein the test oil is a high aromatic high sulfur oil. P1, P3 and P8 are of the present invention and P14 is outside the scope of the invention. Each of these terpolymers have a filterability time of between 51 and 59 seconds. Therefore, it is not clear to the examiner what Applicant is trying to demonstrate.

With respect to Brown requiring copolymer B and the filterability data showing filter blockage, it is noted that Applicant is also claiming an ethylene vinyl acetate copolymer (see claim 13). Also, it is not clear why in the comparative data 2% and 5% of polymer B is used. In the disclosure of Brown, the use of component B is in ppm and

percentages are only used when referring to concentrates of the additives. The examiner cannot ascertain from the data if unexpected results are obtained.

With respect to Murakami teaching away from the use of fatty acid esters, the examiner respectfully disagrees. Murakami merely states that adding the esters to low sulfur fuels is expensive and that the fuel storage life is not as long as gas oils of higher sulfur content. Therefore, one desiring to improve the lubricity of the low sulfur fuel oil recognizes that the fuel may be more expensive, but the upside of this is that the injection system will have less wear.

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cephia D. Toomer/  
Primary Examiner  
Art Unit 1797

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